



# EDUC258

## Mathematics in Schools

S3 External 2018

*Department of Educational Studies*

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## General Information

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Credit points

3

Prerequisites

((12cp at 100 level or above) including EDUC105 or EDUC106) or (admission to BEd(Prim) or BEd(Sec))

Corequisites

Co-badged status

Unit description

This unit is designed for intending primary teachers and intending secondary Mathematics teachers. It focuses on the factors affecting school students' learning of Mathematics. Three major themes are addressed: the meaning of selected basic concepts; how students learn these basic concepts; and how teaching can influence student learning. There is a common lecture strand which examines current research perspectives on learning and teaching Mathematics in schools, and separate tutorial classes for intending primary and secondary teachers. The Session 3 offering is only available to intending primary teachers.

## Important Academic Dates

Information about important academic dates including deadlines for withdrawing from units are available at <https://www.mq.edu.au/study/calendar-of-dates>

## Learning Outcomes

On successful completion of this unit, you will be able to:

1. Demonstrate knowledge and understanding of research into how students learn certain fundamental mathematical ideas and the implications for teaching.

2. Demonstrate knowledge and understanding of strategies for differentiating teaching to meet the specific learning needs of students across the full range of abilities.
3. Demonstrate understanding of the concepts, substance and structure of the content and teaching strategies of mathematics
4. Demonstrate knowledge and understanding of numeracy teaching and learning strategies and their application in teaching areas
5. Demonstrate understanding of the content covered in the unit.

## Assessment Tasks

Name	Weighting	Hurdle	Due
<u>Numeracy Interview Report</u>	50%	No	December 22, 2018
<u>Exam</u>	50%	No	TBA

### Numeracy Interview Report

Due: **December 22, 2018**

Weighting: **50%**

This assignment is designed to develop your ability to interpret the development of children's mathematical understanding and for you to produce a thoughtful and considered interpretation of one child's grasp of some basic numeracy concepts and skills

On successful completion you will be able to:

- 1. Demonstrate knowledge and understanding of research into how students learn certain fundamental mathematical ideas and the implications for teaching.
- 2. Demonstrate knowledge and understanding of strategies for differentiating teaching to meet the specific learning needs of students across the full range of abilities.
- 3. Demonstrate understanding of the concepts, substance and structure of the content and teaching strategies of mathematics
- 4. Demonstrate knowledge and understanding of numeracy teaching and learning strategies and their application in teaching areas

### Exam

Due: **TBA**

Weighting: **50%**

This exam will cover content from the five modules.

On successful completion you will be able to:

- 1. Demonstrate knowledge and understanding of research into how students learn certain fundamental mathematical ideas and the implications for teaching.
- 3. Demonstrate understanding of the concepts, substance and structure of the content and teaching strategies of mathematics
- 4. Demonstrate knowledge and understanding of numeracy teaching and learning strategies and their application in teaching areas
- 5. Demonstrate understanding of the content covered in the unit.

## Delivery and Resources

The unit will be delivered over five On Campus Days. You are expected to listen to on-line lectures, engage in classroom discussions and activities, complete readings and work as described on iLearn.

The five On Campus Days will be held on **Wednesdays, 10am to 1:30pm, on the following dates: December 5, 12 and 17, 2018; January 9 and 16, 2019**

## Policies and Procedures

Macquarie University policies and procedures are accessible from [Policy Central \(https://staff.mq.edu.au/work/strategy-planning-and-governance/university-policies-and-procedures/policy-central\)](https://staff.mq.edu.au/work/strategy-planning-and-governance/university-policies-and-procedures/policy-central). Students should be aware of the following policies in particular with regard to Learning and Teaching:

- [Academic Appeals Policy](#)
- [Academic Integrity Policy](#)
- [Academic Progression Policy](#)
- [Assessment Policy](#)
- [Fitness to Practice Procedure](#)
- [Grade Appeal Policy](#)
- [Complaint Management Procedure for Students and Members of the Public](#)
- [Special Consideration Policy](#) (**Note:** *The Special Consideration Policy is effective from 4 December 2017 and replaces the Disruption to Studies Policy.*)

Undergraduate students seeking more policy resources can visit the [Student Policy Gateway \(https://students.mq.edu.au/support/study/student-policy-gateway\)](https://students.mq.edu.au/support/study/student-policy-gateway). It is your one-stop-shop for the key policies you need to know about throughout your undergraduate student journey.

If you would like to see all the policies relevant to Learning and Teaching visit [Policy Central \(https://staff.mq.edu.au/work/strategy-planning-and-governance/university-policies-and-procedures/policy-central\)](https://staff.mq.edu.au/work/strategy-planning-and-governance/university-policies-and-procedures/policy-central).

## Student Code of Conduct

Macquarie University students have a responsibility to be familiar with the Student Code of

Conduct: <https://students.mq.edu.au/study/getting-started/student-conduct>

## Results

Results shown in *iLearn*, or released directly by your Unit Convenor, are not confirmed as they are subject to final approval by the University. Once approved, final results will be sent to your student email address and will be made available in [eStudent](#). For more information visit <ask.mq.edu.au>.

## Student Support

Macquarie University provides a range of support services for students. For details, visit <http://students.mq.edu.au/support/>

## Learning Skills

Learning Skills (<mq.edu.au/learningskills>) provides academic writing resources and study strategies to improve your marks and take control of your study.

- [Workshops](#)
- [StudyWise](#)
- [Academic Integrity Module for Students](#)
- [Ask a Learning Adviser](#)

## Student Services and Support

Students with a disability are encouraged to contact the [Disability Service](#) who can provide appropriate help with any issues that arise during their studies.

## Student Enquiries

For all student enquiries, visit Student Connect at <ask.mq.edu.au>

## IT Help

For help with University computer systems and technology, visit [http://www.mq.edu.au/about\\_us/offices\\_and\\_units/information\\_technology/help/](http://www.mq.edu.au/about_us/offices_and_units/information_technology/help/).

When using the University's IT, you must adhere to the [Acceptable Use of IT Resources Policy](#). The policy applies to all who connect to the MQ network including students.

## Graduate Capabilities

### Creative and Innovative

Our graduates will also be capable of creative thinking and of creating knowledge. They will be imaginative and open to experience and capable of innovation at work and in the community. We want them to be engaged in applying their critical, creative thinking.

This graduate capability is supported by:

## Learning outcomes

- 4. Demonstrate knowledge and understanding of numeracy teaching and learning strategies and their application in teaching areas
- 5. Demonstrate understanding of the content covered in the unit.

## Capable of Professional and Personal Judgement and Initiative

We want our graduates to have emotional intelligence and sound interpersonal skills and to demonstrate discernment and common sense in their professional and personal judgement. They will exercise initiative as needed. They will be capable of risk assessment, and be able to handle ambiguity and complexity, enabling them to be adaptable in diverse and changing environments.

This graduate capability is supported by:

## Learning outcomes

- 2. Demonstrate knowledge and understanding of strategies for differentiating teaching to meet the specific learning needs of students across the full range of abilities.
- 3. Demonstrate understanding of the concepts, substance and structure of the content and teaching strategies of mathematics
- 4. Demonstrate knowledge and understanding of numeracy teaching and learning strategies and their application in teaching areas
- 5. Demonstrate understanding of the content covered in the unit.

## Discipline Specific Knowledge and Skills

Our graduates will take with them the intellectual development, depth and breadth of knowledge, scholarly understanding, and specific subject content in their chosen fields to make them competent and confident in their subject or profession. They will be able to demonstrate, where relevant, professional technical competence and meet professional standards. They will be able to articulate the structure of knowledge of their discipline, be able to adapt discipline-specific knowledge to novel situations, and be able to contribute from their discipline to inter-disciplinary solutions to problems.

This graduate capability is supported by:

## Learning outcomes

- 1. Demonstrate knowledge and understanding of research into how students learn certain fundamental mathematical ideas and the implications for teaching.
- 2. Demonstrate knowledge and understanding of strategies for differentiating teaching to meet the specific learning needs of students across the full range of abilities.
- 3. Demonstrate understanding of the concepts, substance and structure of the content and teaching strategies of mathematics

- 4. Demonstrate knowledge and understanding of numeracy teaching and learning strategies and their application in teaching areas
- 5. Demonstrate understanding of the content covered in the unit.

## Assessment tasks

- Numeracy Interview Report
- Exam

## Critical, Analytical and Integrative Thinking

We want our graduates to be capable of reasoning, questioning and analysing, and to integrate and synthesise learning and knowledge from a range of sources and environments; to be able to critique constraints, assumptions and limitations; to be able to think independently and systemically in relation to scholarly activity, in the workplace, and in the world. We want them to have a level of scientific and information technology literacy.

This graduate capability is supported by:

## Learning outcomes

- 2. Demonstrate knowledge and understanding of strategies for differentiating teaching to meet the specific learning needs of students across the full range of abilities.
- 3. Demonstrate understanding of the concepts, substance and structure of the content and teaching strategies of mathematics
- 4. Demonstrate knowledge and understanding of numeracy teaching and learning strategies and their application in teaching areas
- 5. Demonstrate understanding of the content covered in the unit.

## Assessment tasks

- Numeracy Interview Report
- Exam

## Problem Solving and Research Capability

Our graduates should be capable of researching; of analysing, and interpreting and assessing data and information in various forms; of drawing connections across fields of knowledge; and they should be able to relate their knowledge to complex situations at work or in the world, in order to diagnose and solve problems. We want them to have the confidence to take the initiative in doing so, within an awareness of their own limitations.

This graduate capability is supported by:

## Learning outcomes

- 1. Demonstrate knowledge and understanding of research into how students learn certain fundamental mathematical ideas and the implications for teaching.

- 2. Demonstrate knowledge and understanding of strategies for differentiating teaching to meet the specific learning needs of students across the full range of abilities.
- 5. Demonstrate understanding of the content covered in the unit.

## Assessment tasks

- Numeracy Interview Report
- Exam

## Effective Communication

We want to develop in our students the ability to communicate and convey their views in forms effective with different audiences. We want our graduates to take with them the capability to read, listen, question, gather and evaluate information resources in a variety of formats, assess, write clearly, speak effectively, and to use visual communication and communication technologies as appropriate.

This graduate capability is supported by:

## Learning outcomes

- 1. Demonstrate knowledge and understanding of research into how students learn certain fundamental mathematical ideas and the implications for teaching.
- 2. Demonstrate knowledge and understanding of strategies for differentiating teaching to meet the specific learning needs of students across the full range of abilities.
- 3. Demonstrate understanding of the concepts, substance and structure of the content and teaching strategies of mathematics
- 4. Demonstrate knowledge and understanding of numeracy teaching and learning strategies and their application in teaching areas

## Changes from Previous Offering

There will be no quizzes in the 2018 offering.

## Changes since First Published

Date	Description
21/11/2018	On campus dates revised